

IN THE CLAIMS:

1. (Original) A photomask blank comprising a transparent substrate, at least one layer of light-shielding film and at least one layer of antireflective film both on the substrate, wherein

said light-shielding film and said antireflective film are formed of a chromium base material containing oxygen, nitrogen and carbon such that the content of carbon decreases stepwise or continuously from a surface side toward the substrate.

2. (Original) The photomask blank of claim 1 wherein said light-shielding film and said antireflective film each are formed of a chromium oxynitride carbide.

3. (Original) A photomask fabricated by lithographically patterning the photomask blank of claim 1.

4. (Original) A method of manufacturing a photomask blank comprising a transparent substrate, at least one layer of light-shielding film and at least one layer of antireflective film both on the substrate,

said method comprising the step of forming said light-shielding film and said antireflective film by effecting reactive sputtering using a target of chromium or chromium containing at least one element of oxygen, nitrogen and carbon and a sputtering

gas containing at least carbon dioxide gas, a nitrogen-containing gas and an inert gas, so that the content of carbon decreases stepwise or continuously from a surface side toward the substrate.

5. (Original) The method of claim 4 wherein said light-shielding film and said antireflective film each are formed of a chromium oxynitride carbide.

6. (Original) The method of claim 5 wherein said reactive sputtering step includes changing the proportion of the carbon dioxide gas in the sputtering gas for controlling the content of carbon in chromium oxynitride carbide of said light-shielding film and said antireflective film.

7. (Original) A method of manufacturing a photomask, comprising the step of lithographically patterning the photomask blank manufactured by the method of claim 4.

8. (NEW) The photomask blank of claim 1, wherein a lower layer of said at least one layer of light-shielding film consists essentially of 50 to 90 at % of Cr, 2 to 15 at % of C, 10 to 30 at % of O, and 2 to 20 at % of N.

9. (NEW) The photomask blank of claim 1, wherein a lower layer of

said at least one layer of light-shielding film consists essentially of 60 to 80 at % of Cr, 3 to 7 at % of C, 12 to 20 at % of O, and 5 to 15 at % of N.

10. (NEW) The method of claim 4, wherein a lower layer of said at least one layer of light-shielding film consists essentially of 50 to 90 at % of Cr, 2 to 15 at % of C, 10 to 30 at % of O, and 2 to 20 at % of N.

11. (NEW) The method of claim 4, wherein a lower layer of said at least one layer of light-shielding film consists essentially of 60 to 80 at % of Cr, 3 to 7 at % of C, 12 to 20 at % of O, and 5 to 15 at % of N.

12. (NEW) The photomask blank of claim 1, wherein an upper layer of said at least one layer of antireflective film consists essentially of 20 to 60 at % of Cr, 5 to 30 at % of C, 20 to 55 at % of O, and 5 to 25 at % of N.

13. (NEW) The photomask blank of claim 1, wherein an upper layer of said at least one layer of antireflective film, consists essentially of 35 to 50 at % of Cr, 6 to 15 at % of C, 25 to 50 at % of O, and 10 to 20 at % of N.

14. (NEW) The method of claim 4, wherein an upper layer of said at

Serial No.: 10/073,415

least one layer of antireflective film consists essentially of 20 to 60 at % of Cr, 5 to 30 at % of C, 20 to 55 at % of O, and 5 to 25 at % of N.

15. (NEW) The method of claim 4, wherein an upper layer of said at least one layer of antireflective film, consists essentially of 35 to 50 at % of Cr, 6 to 15 at % of C, 25 to 50 at % of O, and 10 to 20 at % of N.